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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/960,296

09/24/2001

Kenji Maruyama

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04/14/2003

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EXAMINER

SCHILLINGER, LAURA M

ART UNIT

PAPER NUMBER

2813

DATE MAILED: 04/14/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/960,296

Applicant(s)

MARUYAMA ET AL.

Examiner

Laura M Schillinger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 17-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to Amendment A, dated 1/23/03 in Paper No. 9.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukushima et al ('301).

In reference to claim 1, Fukushima teaches a device comprising:

A first electrode (Fig.24 (242));

A ferroelectric film (Fig.24 (243));

A second electrode (Fig.24 (244));

An intermediate layer of perovskite crystal formed at the boundary between the first electrode, the ferroelectric film and the second electrode (Abs., lines: 1-5), materials of the intermediate layer being different from materials of the first electrode, second electrode and the ferroelectric film (Col.4, lines: 35-40).

In reference to claim 2, Fukushima teaches wherein the perovskite is : BaTiO₃ (Col.28, lines: 13-16).

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In reference to claim 3, Fukushima teaches wherein the intermediate layer further comprises: Sr (Col:28, lines: 13-16)

In reference to claim 4, Fukushima teaches wherein the first electrode or second electrode is metal (Col.17, lines: 35-45).

In reference to claim 5, Fukushima teaches wherein the first electrode or second is metal (Col.17, lines: 35-45).

In reference to claim 6, Fukushima teaches wherein the first or second electrode is metal (Col.17, lines: 35-45).

In reference to claim 7, Fukushima teaches wherein the metal is Ni (Col.17, lines: 35-45).

In reference to claim 8, Fukushima teaches wherein the metal is Ni (Col.17, lines: 35-45).

In reference to claim 9, Fukushima teaches wherein the metal is Ni (Col.17, lines: 35-45).

In reference to claim 10, Fukushima teaches wherein the ferroelectric material is Pb based (Col.2, lines: 5-10).

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In reference to claim 11, Fukushima teaches wherein the ferroelectric material is PZT (Col.2, lines: 5-10).

In reference to claim 12, Fukushima teaches wherein the PZT film further contains Ca (Col.3, lines: 50-65 see also Col.19, lines: 30-35).

In reference to claim 13, Fukushima teaches wherein the ferroelectric material is BST (Col.19, lines: 15-20).

In reference to claim 14, Fukushima teaches wherein the ferroelectric has Bi (Col.4, lines: 1-10, 3A-7A consists of Bi).

In reference to claim 15, Fukushima teaches wherein the ferroelectric has SrBiTaO (Col.4, lines: 1-30).

In reference to claim 16, Fukushima teaches a device comprising:

A first electrode (Fig.24 (242));

A ferroelectric film (Fig.24 (243));

A second electrode (Fig.24 (244));

A transistor (Fig.22B (234 and 242);

An intermediate layer of perovskite crystal formed at the boundary between the first electrode, the ferroelectric film and the second electrode (Abs., lines: 1-5) materials of the

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intermediate layer being different from materials of the first electrode, second electrode and the ferroelectric film (Col.4, lines: 35-40).

Response to Arguments


Applicant's arguments filed 1/29/03 have been fully considered but they are not persuasive. Applicant argues that Fukushima fails to teach wherein the materials of the intermediate layer being different from materials of the first electrode, second electrode and the ferroelectric film. However, such an argument is not persuasive since on Col.4, lines: 35-40 Fukushima teaches alternative ways to form the electrodes such as a refractory metal, and another as a perovskite material; it is understood that the ferroelectric film is inbetween.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura M Schillinger whose telephone number is (703) 308-6425. The examiner can normally be reached on M-T, R-F 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W Whitehead, Jr. can be reached on (703) 308-4940. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

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LMS

April 2, 2003